



Section: 6

Troubleshooting C-Series Stack Dryer

Trouble Shooting

Electronic Control Diagnostic Lights

The electronic control has 6 diagnostic lights to aid in service of the dryer. Each pocket has indicator lights for the motor circuit, door switch circuit, and the heat circuit. When the electronic control is carefully unlocked and moved forward these lights are visible on the circuit board. They are each labeled as to function indicated.

1. When either dryer door is closed, the appropriate door light on the computer should be illuminated indicating that the door is closed.
2. When either dryer is running, the appropriate motor light on the computer should be illuminated indicating that the computer is calling for the motor to operate.
3. When either dryer is calling for heat, the appropriate heat light on the computer should be illuminated indicating that the computer is calling for heat.

An example of their function would be troubleshooting an upper dryer pocket that did not heat.

1. Start the machine and insure that it did not heat.
2. Check the upper heat light and see if it is lit.
3. If the heat light is on, this would indicate that the computer was calling for heat and that it was not at fault. You would then go on to check the rest of the heat circuit.

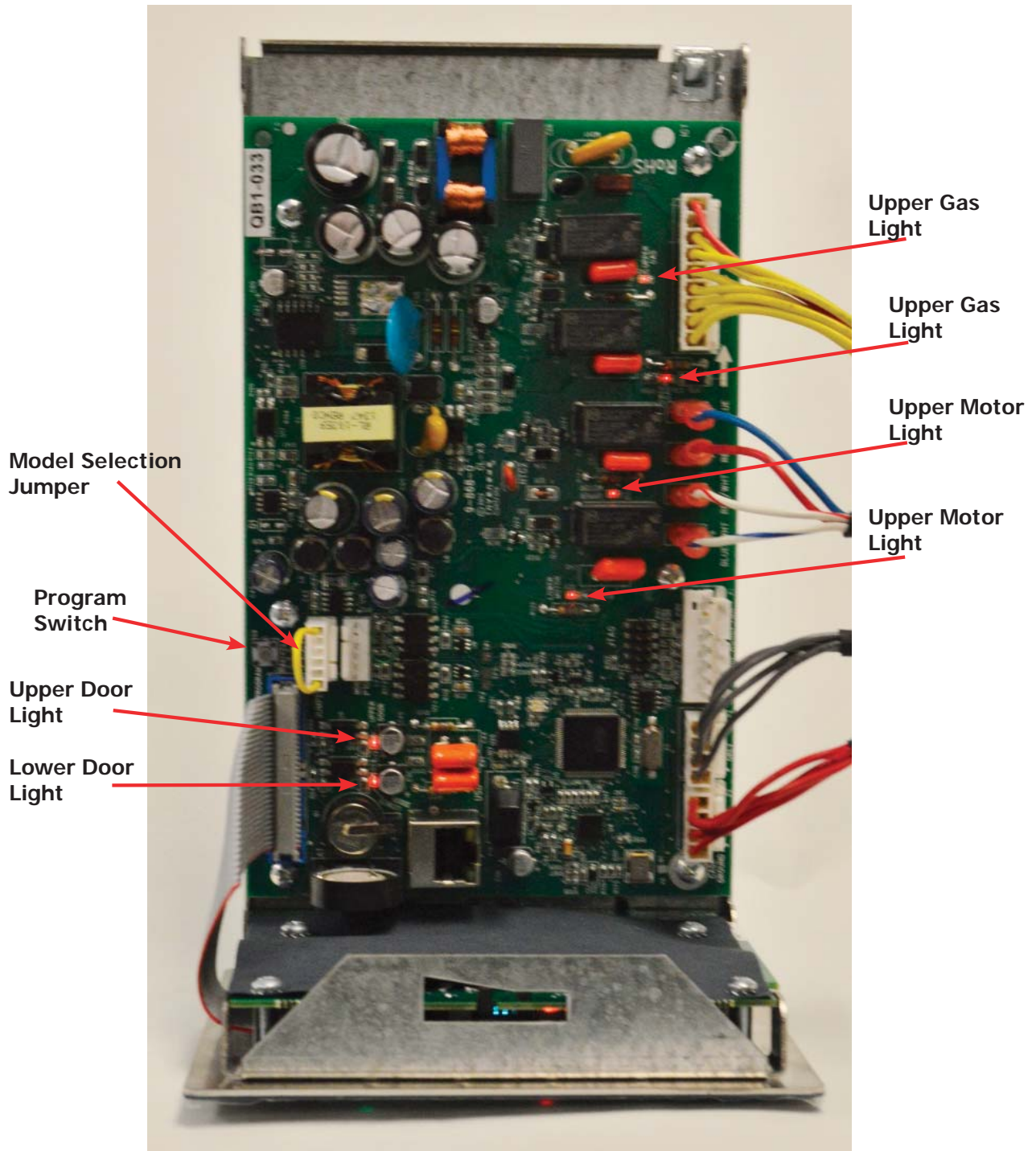


Figure: 1

To enter a test Cycle Mode you will have to enter the programming mode:

MANUAL PROGRAMMING:

The dryer must be in idle mode for the manual programming menus to be accessed. Idle mode is when the dryer is not actively running a drying cycle and the vend price is displayed on the screen (for both upper and lower dryers).

To enter the manual programming mode, the control tray on the dryer must be unlocked and pulled out to reveal the programming button. The programming button is then pressed for 1 second. The control should display "DRYER PROGRAMMING".

See the figure 1

Next press Start and you can scroll through the options you will either want to select Quick test or Continuous Test depending on the length of time you require to preform the tests.

Quick Test Option:

When the Quick Test Option is chosen, the dryer will begin a shortened dry cycle without the displayed vend price being met. The purpose of this shortened cycle is to test all major components for proper operation.

Error Codes should all function normally during this test. The display will show customer prompts in a similar way to a normal dry cycle.

Continuous Test Option:

Similar to the Quick Test, when the Continuous Test Option is chosen, the dryer will begin a dry cycle without the displayed vend price being met. However, in this case, it will be a continuously-running cycle. It will not time out after any designated amount of time.

CAUTION: This option is meant for factory use only. Do not operate the dryer with this cycle active without factory authorization.

Error Codes

Symptom	Probable Cause	Suggested Remedy
TEMP SENSOR SHORT	Shorted Temperature Sensor or wire.	The dryer control shall not start until the detected short circuit is removed. Regardless of condition of short circuit, Error Code will be displayed until programming button is pressed to return machine to idle mode.
TEMP SENSOR OPEN	Open Temperature Sensor or wire	The dryer control shall not start until the detected short circuit is removed. Regardless of condition of short circuit, Error Code will be displayed until programming button is pressed to return machine to idle mode.
PCB ERROR1	Memory corrupted	Power machine down and try to reset control. Verify voltage to the control board. Check ground to board. Replace control board if error can not be cleared
PCB ERROR2	Analog/ Digital Error	Power machine down and try to reset control. Verify voltage to the control board. Check ground to board. Replace control board if error can not be cleared
COMM ERROR1	Communication Bus Error	Power machine down and try to reset control. Verify voltage to the control board. Check ground to board. Replace control board if error can not be cleared
COMM ERROR2	No Dryer Model Selected	This error occurs when a pin combination on the model selection header is used that does not have a model designated for it. check connector marked Jumpers on the control board.
COMM ERROR7	Communication Bus Error	If connected to DexterLive, Disconnect cable, and preform a soft restart by holding down the program button on power up. Preform Soft restart. contact your Dexter factory representative.
Fuse Error	Internal Control program Error.	Internal IC issue. Replace control.
CRC ERROR	Firmware Corrupted	The error is fatal. The control must be replaced.

TROUBLESHOOTING

Symptom	Probable Cause	Suggested Remedy
Tumbler does not turn	Drive belts	Check both drive belts. Replace if failed.
	Drive motor	Check capacitor and motor. Replace if failed
	Door switch	Check for door closed L.E.D on control board. Check door switch contacts and adjustment. Adjust or replace door switch.
	Electronic control	Is electronic control closing motor relay to power drive motor? Check for motor light on electronic control. If no light and time counting down, change control. If light is on, check for proper voltage and wiring to motor relay in rear control compartment.
	Motor run relay	Test for proper voltage to run relay coil, Test output voltage of relay when contacts ingauged. if no voltage replace relay.

Symptom	Probable Cause	Suggested Remedy
Tumbler turns but no spark at burner	Glass fuse	Check small glass control fuse in back of dryer. Replace if failed.
	Temperature sensor	The temperature sensor should have between 30,000 ohms and 60,000 ohms resistance at room temperature if okay. Replace if not in this range.
	Ignition	Check for 24VAC output from transformer.
	Transformer	Replace if have 120V between black & white and no 24V between red and yellow.
	Over temperature	Check to see if manually resettable thermostat. Thermostat is kicked out. Reset by pushing red reset button.
	Ignition control	Check for 24VAC coming into the control on the at burner red wire. If voltage, then check for 24VAC out on the brown wire. Also check for spark at the ignitor. If no 24VAC output or no spark to the ignitor, replace ignition control.
	Air flow switch	Check air flow switch to be sure it closes when dryer is running. If not, adjust or replace switch.
	Hi-limit	Check for continuity. Should be 0 ohms resistance when cold. If not, replace thermostat.
	Gas supply	No gas can cause system lockout
	Electronic control	Is electronic control closing gas relay to power Control heat circuit? Check for gas light on electronic control. If no light change control. If light is on, check voltage and components in heat circuit at transformer at rear of unit.

Symptom	Probable Cause	Suggested Remedy
Tumbler turns, ignition sparks, no flame	Gas supply	Make sure gas supply is working.
	Gas pressure	Make manometer check of gas pressure. Adjust if necessary.
	Spark electrode sensor	Check for damage to electrode or mounting. Replace if necessary.
	Gas valve	Check coil continuity, replace valve if failed.
	Ignition Control	Check for 24VAC to gas valve coils. If no voltage replace ignition control.
Burner Lights, but goes on and off	Electrodes	Check low voltage harness for possible wire break or cuts to allow no signal back to ignition control
Slow drying	Temperature Setting	Check program for correct high temperature setting. Adjust if necessary.
	Air flow restrictions necessary	<ol style="list-style-type: none"> 1. Check lint screen and clean if necessary. 2. Check exhaust for correct length and clean if necessary. 3. Check exhaust damper to insure that it opens when dryer is running and closes when dryer is not in use. 4. Check makeup air to insure that it is adequate. Increase makeup air if necessary. 5. Check static Back pressure no more than .3
	Temperature sensor	The temperature sensor should have between 30,000 ohms and 60,000 ohms resistance at room temperature if okay. Replace if not in this range.

Symptom	Probable Cause	Suggested Remedy
Erratic display	Initial start-up	If erratic on initial start-up, leave power on for approximately one hour and check machine operation again.
	Grounding	Machine must be grounded by separate conductor back to neutral bar in breaker box.
	Program	Check program and make corrections if necessary.
	Voltage spike	Power down machine for 20 seconds and repower. If no improvement, replace control.
Manual overtemp tripping frequently	Recirculating chamber Lint accumulation	Remove manual overtemp thermostat and inspect in chamber for excessive lint build up. Access also gained to this chamber by removing recirculation duct mounted at bottom of chamber, or the panel inside burner chamber between burners and rear back panel
	Exhaust ducting Excessive lint buildup	Remove exhaust duct at rear of dryer and inspect for excessive lint build up in complete duct from dryer to where duct exits building.
	Clean lint of of top heat air chamber above tumbler	Remove front panel completely. Be careful of any wiring attached. Remove heated air chamber cover and clean above tumbler back to burner housing.

Dryer Idle - No Coins Added

Top Dryer Used For This Example

120VAC is supplied to the Electronic Control (computer board) by L1 on the black wire. This tells us that any time there is power to the dryer that the Computer Board will be powered with and the display lighted. 120VAC also goes to one side of the door switch on a black wire. Closing the loading door sends 120VAC to the Computer Board on two blue wires. One blue wire makes 120VAC available to one side of the Motor Run Relay R1. On the computer the other blue wire provides a 120VAC signal to the Computer Board telling it that the door is closed. The door light on the computer board should be illuminated when the door is closed.

Coins Added - Motor Starting and Running

Top Dryer Used For This Example

As each coin is added the Coin Switch closes and completes a circuit to the Computer Board. The Computer Board counts these signals and when the correct number of coins are counted the Computer Board closes the Motor Run Relay on the computer. With this Relay closed, 120VAC is supplied to the Motor Relay on the red wire. The motor light on the computer board should be illuminated anytime the computer calls for the motor to operate. The Motor Start Switch is drawn in the start position. In this position the incoming power is supplied directly to the main run winding and through the Start Capacitor to the Auxiliary Winding (start winding). As the Motor comes up to speed, the switch opens the circuit to the Start Winding and closes the circuit to the Gas Relay. This kicks the Start Winding out of the circuit and provides power to the Gas Relay on the violet wire. The heat circuit in the dryer can not operate if the motor is not running. The gas LED on the computer board should be illuminated after the Motor LED is on and the computer determines if gas is necessary to satisfy temperature requirements.

Heat Circuit

Top Dryer Used For This Example

With the Drive Motor running, 120VAC is provided to the Gas Relay on the violet wire from the motor. This violet wire connects and changes to an orange wire out of the Gas Relay. The gas light on the computer board should be illuminated anytime the computer calls for the heat. The Computer Board closes the Gas Relay Contact providing 120VAC on the orange wire to the High Limit Thermostat. The High Limit Thermostat is normally closed. (It will open, turning off the heat circuit, if the dryer can't move enough air from problems such as an exhaust restriction) 120VAC goes through the normally closed High Limit Thermostat to the normally open Air Switch (Sail Switch) on the brown wire. This switch is closed only if the dryer is running and has the correct air flow. With the dryer running and the Air Switch closed, 120VAC is supplied to the upper overtemp thermostat on the gray wire and changes to the black wire to the gas control transformer. This transformer steps 120VAC down to 24VAC. There is a 1.5 amp in-line fuse that protects the Ignition Controller after the transformer. 24 volts is supplied to the Spark Ignition Module (Ignition Controller) by the Control Transformer on the red wire. The Spark Ignition Module will then send high voltage to the Spark Electrode via the High Voltage Lead (this lead looks like an automotive spark plug wire). The Spark Ignition Module also sends 24VAC to the Gas Valve Coils which open the Gas Valve. When ignition occurs the high voltage sparking stops. If ignition does not occur, the Spark Ignition Module will only spark for 10 seconds. The Spark Ignition Module will try this sequence for 10 seconds in 2 more sequences before locking out.

Over Temperature Thermostat (Manual Reset Safety Shutoff Thermostat)

Top Dryer Used For This Example

The neutral side of the schematic (L2) uses the white wire. On the neutral side prior to the Heat Circuit there is an Over Temperature Thermostat. This thermostat is manually reset by pushing in the red button. The Over Temperature Thermostat is a safety backup for the entire Heat Circuit. If the dryer overheats, the Over Temperature Thermostat opens the neutral side of the line to all components except the Computer Board and motor. This turns off the heat but leaves the Computer Board lighted and the drive motor powered and turning the basket for cool down.

Cool Down

Top Dryer Used For This Example

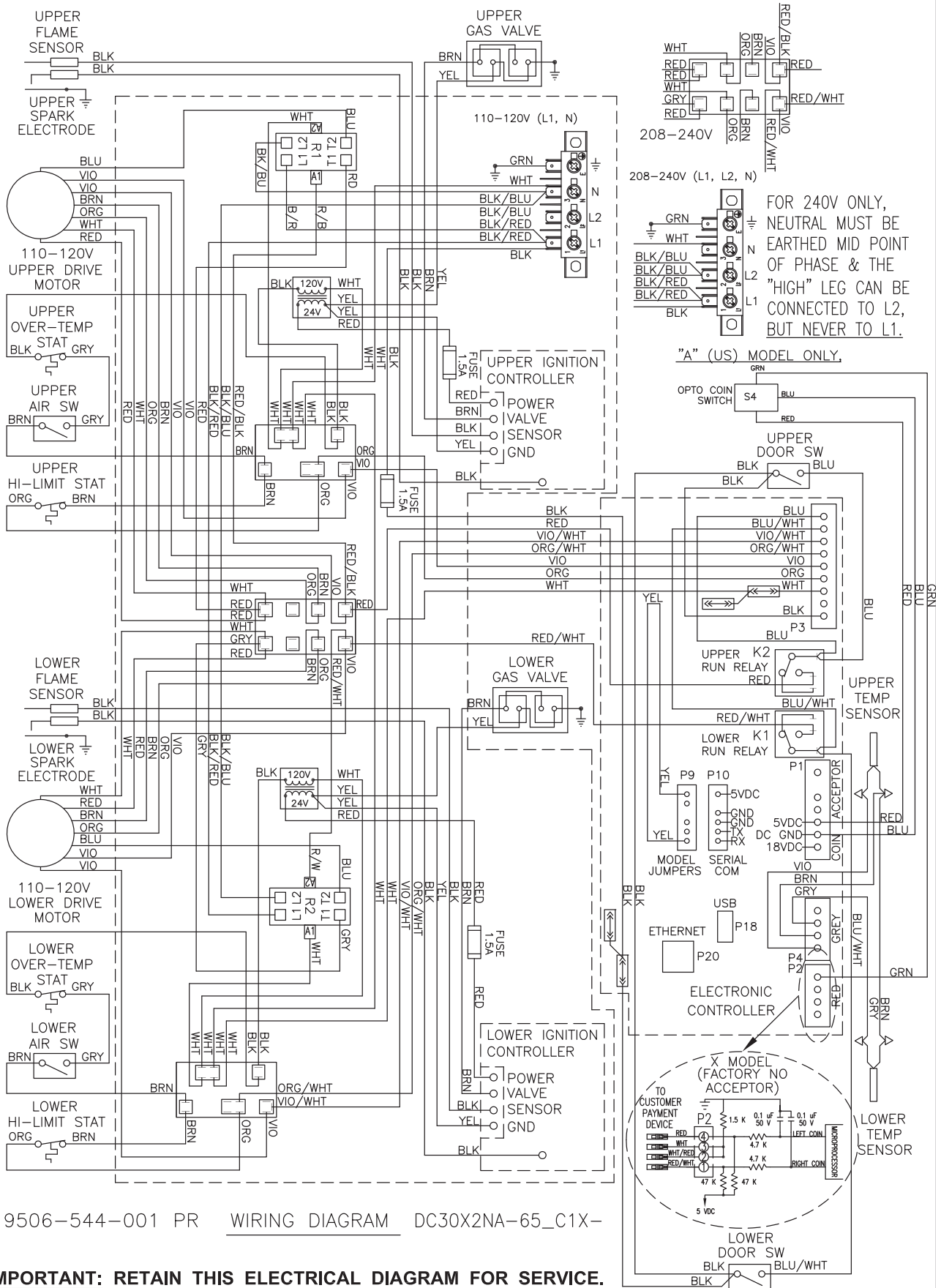
At the preprogrammed time (2 minutes factory setting - adjustable) the Computer Board will open the Gas Relay Contact. This allows the Drive Motor to continue to run but without heat. The gas light on the computer board should not be illuminated anytime the computer is in cool down. This Cool Down period allows the clothing (zippers, snaps, etc.) time to cool down to a temperature that is easily handled by customers.

End of Cycle

Top Dryer Used For This Example

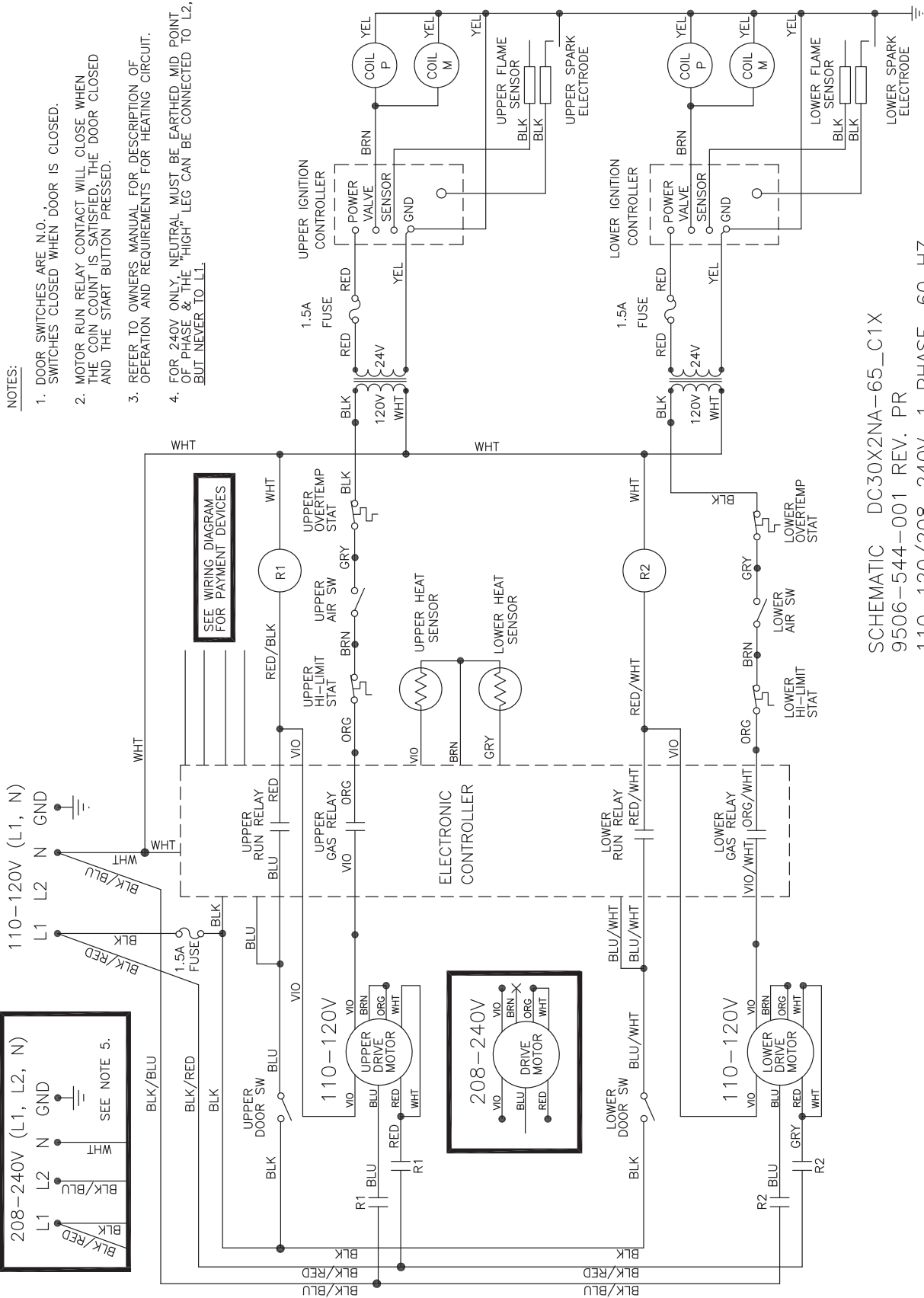
At the end of the cool down, the Computer Board opens the Run Relay which removes power from the Drive Motor on the red wire. The motor light on the computer board should no longer be illuminated. The Drive Motor stops and the Computer Board display now flashes until the dryer door is opened. Once the door is opened to remove the clothing the display goes back to vend price.

Wiring Diagram for DC30x2



IMPORTANT: RETAIN THIS ELECTRICAL DIAGRAM FOR SERVICE.

Wiring Schematic for DC30x2



NOTES:

1. DOOR SWITCHES ARE N.O. SWITCHES CLOSED WHEN DOOR IS CLOSED.
2. MOTOR RUN RELAY CONTACT WILL CLOSE WHEN THE COIN COUNT IS SATISFIED, THE DOOR CLOSED AND THE START BUTTON PRESSED.
3. REFER TO OWNERS MANUAL FOR DESCRIPTION OF OPERATION AND REQUIREMENTS FOR HEATING CIRCUIT.
4. FOR 240V ONLY, NEUTRAL MUST BE EARTHED. MID POINT OF PHASE & THE "HIGH" LEG CAN BE CONNECTED TO L2, BUT NEVER TO L1.

SCHEMATIC DC30X2NA-65_C1X
 9506-544-001 REV. PR
 110-120/208-240V, 1 PHASE, 60 HZ

IMPORTANT: RETAIN THIS ELECTRICAL SCHEMATIC FOR SERVICE.